San Francisco Bay PCBs TMDL Meeting/CEQA Scoping
Summary of Public Comments/Questions

San Francisco Bay Regional Water Quality Control Board
Oakland, CA
February 10, 2004
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I. Background

San Francisco Bay Regional Water Quality Control Board (Water Board) staff is currently developing the PCBs Total Maximum Daily Load (TMDL) for San Francisco Bay. The Water Board held a public meeting from 1:00 PM to 3:00 PM on Tuesday, February 10th at the Water Board headquarters. Approximately 55 representatives from public agencies, environmental organizations, industry, environmental consulting firms, POTWs and other members of the public attended.

The goals of the meeting were to:

1. Update stakeholders on the technical findings of the PCBs TMDL Project Report
2. Present the proposed allocations and implementation strategy
3. Serve as the public scoping meeting under the California Environmental Quality Act (CEQA) public scoping meeting
4. Solicit public comments at this stage of the work

Tom Mumley (Water Board) opened the meeting by reviewing the meeting agenda and explaining how this meeting fit into the overall TMDL development process and schedule. He stressed that in the next steps in the process, Water Board staff would be looking to stakeholders for their input on the proposed implementation plan in particular. Fred Hetzel (Water Board) then presented an overview of the PCB TMDL process, the resulting analyses and conceptual models, as well as the proposed allocations and corresponding implementation plan.

Fred Hetzel also provided an overview of the required CEQA public scoping process. For the Water Board to approve a project that physically changes the environment, it needs to consider the potential adverse environmental effects of the proposed action. The Staff Report supporting proposed Basin Plan amendments serve as a "functionally equivalent document," to a Negative Declaration or Environmental Impact Report. These presentations were followed by a question and answer period. The public was also encouraged to submit comments in writing by February 20, 2004.

The questions and answers from the meeting are summarized below. A record and a copy of the presentation are available on the web site: www.swrcb.ca.gov/rwqcb2/sfbaypcbstmdl.htm. **Please note: this document is not intended to be an actual transcript of the meeting. Rather, it is a summary of the question and answer session.** We tried to capture the speakers' comments and questions as accurately as possible. These comments will be used to inform the next step in the TMDL process: proposed regulatory action in the form of an amendment to the Water Quality Control Plan for the San Francisco Bay Basin.

II. Next Steps

Water Board staff will prepare a draft Basin Plan Amendment and supporting staff report. Then, these documents will be circulated for a formal 45-day public comment period. After responses to these comments are prepared, the Water Board will formally consider adoption of the Basin Plan Amendment. It is anticipated that the Staff Report and draft Basin Plan Amendment will be distributed in summer 2004.

III. Summary of Questions and Answers

Fred Krieger (Independent consultant): How does the sediment goal of 2.5 ppb relate to the sediment clean up project? I think some people are concerned that this is a clean up goal, but I think it is not.

Fred Hetzel response – At this time, we do not consider the 25 ppb a sediment clean up goal. I think there are some interim steps to take. Our staff and others are currently working at Hunters' Point shipyard to address these issues. The steps we are taking are prioritized to give us the greatest impact.

Tom Mumley response - This goal is not a clean up goal, it is a numeric target that we say if attained will reflect attainment of water quality standards associated with PCBs. If we developed a clean up target, we would be required to order clean up and dredging of the entire Bay, which would not be practical. What we are proposing here is an action plan to control external sources and we will also look for controllable internal sources. Our simple model demonstrates that, without controlling external sources, the Bay might recover over time – over decades and centuries. However, our intention is to enhance the Bay's ability to recover more rapidly. So, while in theory we could justify no action at all, that would not serve the ultimate environmental goal.

Jim McGrath (Port of Oakland, Environmental Planning): Thanks for the presentation. It clarified one of my questions that you do indeed envision maintaining the voluntary provisions of LTMS (Long Term Management Strategy). I would like to make a comment about the CEQA context. Mandating the moving of dredged material does have a number of significant environmental effects. The Port has done some work with the Air Quality Management District on developing air quality standards, and if you barge approximately 90,000 cubic yards of dredge material beyond Alcatraz, you will exceed air quality standards. Therefore, any solution that relies on moving over 100,000 cubic yards will have significant air quality effects. This reality forces you to look at alternatives that might be more efficient or that might help to avoid these impacts.

Furthermore, reuse of dredged material has some positive environmental impacts. Please consider that the 52,000 kg of PCBs in sediment is not accounted for in the mechanics or the timeframe. Perhaps erosion is inevitable, perhaps it's not. PCB concentrations are an order of magnitude higher in the bed load that extends over 1 meter down. One beneficial use of dredged material is armoring, which helps with

erosion (as noted in the work by Jaffe et al). Another item to be concerned about is that mandating removal of sediment may accelerate erosion. What are alternatives to prevent/reduce erosion? I think it is fundamental to the physics and the whole concept.

One final concept that perhaps may seem a bit glib, but the concept that we can clean up PCBs in the Bay by taking maintenance dredged material upland or to the ocean is akin to having a flooded kitchen and bailing it out with a teaspoon while the taps are still running. Let's focus on closing the taps.

Tom Mumley response – We have had and will continue to have dialogue with you on these issues. The key issue is in implementation. We know that all dredging and dredging material are not equal. There is a big difference between maintenance dredging and special projects. We do know that the erosion issue is a major one, and we also know that human action does affect the bathymetry of the Bay. We want to stress that we are not proposing major changes in how to deal with the Bay. The scale and magnitude of what we are proposing is nothing that is not already in the LTMS. Regardless, we will need your input on crafting an implementation scheme that's doable and accountable.

Lisa Sniderman (BCDC): It was a helpful staff report and easy to read. My question is whether there has been thought of conducting a risk assessment process for PCBs so that managers have a better understanding of what actions/land uses might increase or decrease the risk of remobilizing sediments with PCBs? For example, from the mercury TMDL, we have a better understanding of the potential for methylation to occur at the oxic/anoxic interface with tidal and inter-tidal impacts. Do we know if there may be similar issues for PCBs? Can you say more about how changes to the hydrological regime and increasing tides affect the bioavailabilty of PCBs, and how activities such as restoration (e,g., Cargill salt ponds) might make PCBs in sediments more bioavailable or create conditions that are favorable for the continued release of PCBs ?

Tom Mumley response – Water Board staff are working to enhance our understanding of the food chain and food web model. We are working to improve the mass balance model to make initial estimates, but this still needs to be refined, especially with regard to the active sediment layer. Regarding the active sediment layer and how it differs throughout the Bay, we would like to develop a better tool to determine how the system responds to changes. Clearly, there is still much we do not know. This information is critical and will be an important element to realize through the adaptive implementation process.

Dyan Whyte response – One aspect as Tom described is to further our understanding of how PCBs are moving up the food chain by refining the food web model. Another component is risk management in terms of human exposure. Water Board staff are working to determine what fish people are eating and where and, until we reach our goals, how can we minimize the risks to those people.

Phil Bobel (City of Palo Alto): I want to ask about the math of the model. From the report, it seems there is a huge reservoir of PCBs in the sediment and a much smaller amount currently entering the system on an annual basis from stormwater, dredging, etc. Given this situation, it seems our clean up strategy should rely more heavily on time and

mother nature to remove the reservoir. I might say this differently if I thought we had a good shot at dealing effectively with the sources of input. However, we have no information to suggest, for example, that reducing stormwater inputs by 90 kg/year is feasible. My understanding is that the major problem is legacy sources and the fact that there is wide dispersal of PCBs. If we had information that indicated that a certain amount of PCBs were concentrated in several inland hot spots, then setting such a target might make sense. However, at this time, there is not enough knowledge to know whether these targets are anywhere near feasible. It sets a false expectation and it makes me very nervous. The stormwater agencies will later get pressure for not meeting estimates that were known to be unrealistic from the onset. I would rather see us rely on modeling about what will happen to sediment loads, but I am happy to learn more as I do not fully understand the model.

Fred Hetzel response – The reductions shown in the model are the reductions from the active layer that you get from the input layer – not reductions in the total layer. Stormwater runoff is just one of the inputs in to that layer. We examined concentrations in runoff and found a surprising range of concentrations. Even in areas, which were documented to have been cleaned just years before, we have found some very high concentrations. We acknowledge that it will take a long time to attain the targets and reductions, but we can work toward it.

Tom Mumley response – I would like to bring up the analogy that Richard Looker has used in the past of a sandbox being full of dirty sand. As long as one continues to put dirty sand in, then it will continue to stay dirty. But if one starts to put in clean sand, over time the sand will become cleaner. The question is whether a no action alternative is feasible. Is the sediment entering the Bay now cleaner than that which historically caused the Bay to have elevated levels? If so, we can presume it will clean itself over time. But I do not think that a no action alternative will be acceptable. We must demonstrate that we have done the best we can in terms of clean up.

We don't know the point of diminishing returns, however, and that is our challenge. If we get to the point where we think we can do no better, then we may need to revisit the TMDL. What we can do now is remove the contaminants to the maximum extent practicable during the decades of recovery. Then, using an adaptive implementation approach, we can review and refine our process over time.

Phil Bobel response: I did not mean to suggest a "do nothing" approach, but we need to have a better estimate of what is feasible and realistic. What concerns me is that we do not currently know what percent of incoming sources from runoff is actionable and what percent is legacy and dispersed. Our recommendation is to focus on true hot spots. We should distinguish what is feasible or else we will set false expectations.

Geoff Brosseau (BASMAA) - I have a conceptual thought. The way the concept of bed erosion was treated in the mercury TMDL appears to be significantly different than how it is being treated here for PCBs. The assumption in the mercury TMDL is that some percentage of mercury will be leaving the system as mercury-laden sediment leaves the bay into the ocean through the Golden Gate. Given that in the mercury TMDL, there was "credit" taken for this decrease, why did you choose not to take credit for it here in the PCB TMDL?

Tom Mumley response - We have not ignored the erosion issue in the way we have crafted the TMDL to date and we intend to further address it. We acknowledge that we will need to add on an erosion contribution – both in terms of a source and a sink. It is not included in the simple mass balance equation but it will be part of the modeling effort.

Fred Hetzel response – We have not quantified it, but we have addressed it because it is part of the modeling effort. It is one of the sources of PCBs in the model, so the recovery curve does take that loss into account.

Geoff Brosseau response – I know with the mercury TMDL there were only a couple of data points available to establish that bed erosion number. Is the problem here that there are not enough data points with information about PCB concentrations?

Dyan Whyte response - We did not have this type of modeling effort for mercury so we developed our own approach using the data available. But for PCBs, we do have a model. These two approaches used are not inconsistent and are certainly not inconsistent with regard to where we go from here in terms of implementation.

Geoff Brosseau response - Our comment will then be to provide a comparison of the two approaches and their differences. I have a second question about the recovery curve that was shown. The project report states that with the target of 31 kg/year, there would be recovery in 100 years. However, the recovery curve does not match that number. Could you please reconcile which is correct?

Fred Hetzel response – I will look into that and confirm.

Tom Mumley response – I wish we knew more about what was feasible in terms of controlling sources. Fortunately, there is some grant money available to fund studies on this question. There is $1.3 million in Proposition 13 project dedicated to this topic. There is also a $436,000 project with Proposition 13 money that is focused on controlling PCBs sources in Oakland. So we will have some resources to deal with this in the future and answer some of the outstanding questions. As for erosion of the Bay, we also have some resources to help us better quantify the contribution. Bruce Jaffe with the U.S. Geological Survey has the technical capacity to develop ways to better quantify erosion processes in the Bay. It's a long-term effort that is not simple, but will improve our understanding of the system.

Kevin Buchan (WSPA): The TMDL report indicates that dredging of sediments will uncover and resuspend PCBs. This is not entirely true. At refinery wharfs, dredging is allowed only to depths that will remove recently deposited sediments. This type of dredging (known as maintenance dredging) does not uncover deeper sediments that may be contaminated with PCBs. WSPA requests the RWQCB clarify that dredging activities may or may not uncover buried PCBs laden sediments, and that most maintenance dredging episodes typically remove only recently deposited sediment that originated from the upstream Central Valley watershed.

Tom Mumley response - That's fair.

Heather Gustafson (Bay Planning Coalition): I want to follow up on the dredging issue. Dredging represents a net loss to the system. As we saw with mercury, dredging had a net benefit effect in removal of contaminants from the system due to out of bay disposal. Dredging activities usually consist of general operations and maintenance, thus generally speaking, sediment dredged is ambient. In bay disposal of sediment is simply moving ambient sediment from one location to another. You did not consider the removal of sediment to upland or beneficial reuse. We have some concerns about linking the TMDL to the LTMS. The LTMS is a voluntary plan, which you did acknowledge, but this makes it difficult to tie it so closely to a regulatory report.

Tom Mumley response – We understand what you're asking for and we will respond.

Dan Glaze (Shell Oil): The Project Report is a solid piece of work and I want to acknowledge the contributions of SFEI and the CEP. Thank you. I have one comment on two paragraphs in the conclusion.

"We propose a similar approach to implementing industrial wastewater wasteload allocations. We also propose that petroleum refineries evaluate the significance of their atmospheric emissions as a source of PCBs to the Bay. PCBs are known to be generated as a by-product of combustion and could therefore be produced during the petroleum refining process. These PCBs could be emitted to the air and deposited in the Bay and its watershed."

I have concerns about how this recommendation will be received. Part of this is the misconception that refineries burn things other than natural gas, which we do not. These last two paragraphs seem to put an unnecessary and unfair burden on refineries. Please reword to say that we should participate in such studies. Perhaps there needs to be a study on how many PCBs are released through this process; however, we do not recommend spending a lot of money on a study that would not tell us much.

Randal Friedman (Navy, Region Southwest)

I have a follow up question about the sediment target and the 2.5 ppb number. I still do not understand what it means. My question is that if 2.5 ppb in sediment is not intended for regulatory levels, then what's it doing in the report? When numbers are too undefined like this sediment target, they become an invitation for lawsuits. The process would be better served by working with stakeholders to get agreement on hot spots and focus on recovery efforts, as opposed to creating an unrealistic target that encourages litigation and delay.

I also have a comment about the proposed timeframe and the CEQA process. We have done significant dredging projects in the San Francisco Bay. I know from experience that no NEPA process could be accomplished from start to finish in 6 months. The Water Board's estimated timeframe for this process is too short and unrealistic to do justice to such a complex process - particularly one that involves CEQA.

Dyan Whyte response – We use in the mercury report a risk-based approach to site specific clean up. Our agency has endorsed that approach and is working hard with

other organizations to move forward in that approach. As you may know, with that approach, all applicable standards and numbers need to be considered. We still endorse examining the conditions that exist on that site for determining clean up standards at that individual location. That process looks at bioavailability in organisms using that site. We look at our target as a number to be considered when we look at a specific site condition. However, we still endorse having conditions for a Bay-wide approach. It may be a subtle difference, but we are trying to clarify that.

Randal Freeman response - You have estimated 20 years for conducting this clean up. Our concern is that you start off with one standard that is way below a target in the report, 5 years later it could change, making it difficult to implement. If you want resolution on clean ups, having an unrealistic target is counterproductive.

Dyan Whyte response - It is just as if you are conducting a clean up and you need to look at CTR. We need to move forward in TMDLs arena. If we do not put out any numbers, we will not get anywhere.

Patrick Brooks (Navy, Project Manager, Hunters Point Environmental Clean Up)

Just to clarify, in the next few weeks, we will begin conducting our feasibility study at Parcel F at Hunters Point Shipyard, so the 200 parts per billion cleanup goal for PCBs that was discussed earlier in this meeting for use at the Shipyard is still under evaluation. A decision on the final cleanup goal and how it will be applied will be discussed in the FS.

There are some researchers at Stanford that are studying the bioavailability of PCBs and how to reduce it using activated carbon mixed with bay sediments. This type of remedy is not considered in the RWQCB presentation. Is Water Board considering only soil removal to reduce the risk due to PCBs, or will reducing bioavailability also be considered?

Fred Hetzel response – Some of the slides noted that we are looking at ways to reduce bioavailability, but there is no set method. I wrote letters of support for the Stanford project, so we are aware of such studies. Whether that approach is to be one of the remedial methods, we do not know. There are also other methods.

Fred Krieger (Independent consultant): I have three additional questions.

1. The PCB Project Report proposes reductions of 94% for PCBs for stormwater and the mercury report proposed high reductions for stormwater as well. In addition, the expectation is that EPA's dioxin TMDL may also propose significant reductions. Unless we can identify some key hot spots, it seems the only control alternatives are to have extensive treatment of stormwater or TMDL-allocation trading. I presume the Water Board's expectation is that stormwater programs will fund sediment excavation [as part of a trading program] and if so, should that be explored in the report and CEQA documentation?

2. The data on bivalve shows significant reductions in concentrations over time, but the water column concentrations are more steady. Since both are derived from sediment why is there an inconsistency?

3. What will be the effect of the Trash TMDL court ruling in Los Angeles? The TMDL was invalidated due to the lack of evaluation of economic consequences and inappropriate end point goals? Is the court decision in LA going to be taken into account here?

Tom Mumley response – I'll start with the last question first. The decision is still uncertain; it is in the lower court and may be appealed. As for the Water Board here, we will follow through on our obligation to ensure that the TMDLs developed are legally and procedurally sound. We acknowledge the challenges about cost.

No, we do not expect stormwater to be treated or to require massive sediment reduction activities. Our assumption is that there are doable activities that can help reduce the PCBs in urban runoff. If our hypothesis is proven incorrect, then there is strong evidence to review and revise the TMDL.

The observation is that fish tissue levels may be going down. The model and limited information we have preclude us from doing a detailed cause-and-effect analysis at this time, but this is clearly something we will strive for over time in order to track the system's response to external action. It is a good question, but not easy to answer. Perhaps we can include this in the list of things to consider in the long run.

Phil Bobel (City of Palo Alto) - Our main concern is stormwater; however, I do want to make some points about wastewater. One constructive suggestion I have is regarding the 2.5 ppb target, because individual site operators are nervous that it would apply to them. One approach that worked in the South Bay was to set a target, which was defined in a particular way using the average number of data points. We all agreed on how the number was arrived at and so individual dischargers do not have to worry.

We recognize that wastewater is a fairly small contribution. However, there seem to be some expectation that there would be actions taken by wastewater plants analogous to mercury. This proposed approach makes us a bit nervous because there is a fundamental difference between mercury and PCBs with respect to wastewater. We have worked for a longtime on sources of mercury and we know there are actions we can take because we know the source. So when we calculated a number for mercury it was based on a range of controllable sources to work on. However, we do not have one control strategy for PCBs in wastewater and we usually like to be ahead of the Water Board on this.

Tom Mumley response – I appreciate the wastewater dischargers being out in front in terms of source control/pollution prevention. You say that you have sought and have not found the sources, but my question is how much have you actually looked yet? Are your findings that PCBs are ubiquitous?

Phil Bobel response - We have not thought or looked as hard as we have for pesticides or copper/nickel. We have spent some modest amount of energy on this effort, but there are no apparent wastewater sources for PCBs. For example, when we examined the

path of capacitors and transformers and their sources, we did not see a wastewater link. We could do more research on this, but we have not identified anything yet.

Dan Glazer (Shell Oil) – There are some things we know about treating wastewater. We know that one of the major sources of PCBs and mercury is from the Delta. Most refineries have dual train, tertiary treatment. We have studied this issue and we do not have any tricks in the bag on how to treat it.

Jim McGrath (Port of Oakland): I have two additional comments. Geoff Brosseau raised the question about the model. A model is a good start but it is driven by assumptions about the depth of the active layer, which is influenced by biological activity of the system. It does not capture the physics/biophysics or actual measurements of the system. This aspect of the model needs to be acknowledged and be part of adaptive implementation. I know something about the wind and tidal energy and the sheer stress that varies throughout the Bay. The active sediment layer differs in different places throughout the Bay, so we need to understand this better than we do now.

I will also raise again the example of the dirty sandbox. We are going to ask you to do the math, but a quick review of the numbers shows that the ambient levels in the Bay are 20 ppb, the levels coming from Central Valley are 10 ppb and San Pablo bay has levels as high as 35 ppb lower down. We're not going to get below the 35 ppb until it is all gone.

Mike Bakaldin (City of San Leandro): The City Council has asked for the possible fiscal implications of the proposed TMDL. As this is a public policy decision, will there be a discussion of fiscal impacts? No one is against PCBs clean up, but if the cost is extremely high, there may be some serious fiscal implications. What can the city as a wastewater and stormwater agency expect in terms of costs/requirements?

Tom Mumley response – We understand our responsibility to do a fiscal implication analysis as part of CEQA and the Administrative Procedures Act. We will seek input on this from you. Our Board is very aware of fiscal impacts in the short term, but we want to build a strategy to think smartly in the long term as well. It is a sensitive issue and we will do our best to reach out to cities.

Mike Bakaldin response – Do you have any specific thoughts on treatment of urban runoff? For example, will cities potentially be required to build building a treatment plant? What about inserts/inspection staff?

Tom Mumley response - We know that building a treatment plant is not a realistic alternative. The TMDL is a work in progress. As noted earlier, there is a pilot project in the watershed funded with Proposition 13 money that is designed to generate more information on that effort. We are assuming that you are taking actions at the local levels to intercept existing sources to keep PCBs out of the system, however we have difficulty quantifying the amount. We anticipate that you will optimize the use of existing resources to manage runoff. The best way to accept your challenge is to have you tell us if you think you are doing the right thing. A significant part of PCBs and mercury TMDLs is reviewing what are we doing well now, and how can we get better benefits

with existing resources. We plan to answer the questions using a collaborative process. Over time we can determine what benefits we could get if we had more funds.

Paul Singarella (Latham and Watkins): We submitted comments late yesterday and Tom acknowledged them. I have a policy question related to the sediment target. The sediment target as we understand the target is meant to interpret a narrative statement in the Basin Plan, but that is a narrative statement, so there seems to be no easy technical way to translate this to a numeric target. To what extent does 2.5 ppb represent a policy decision versus a technical translation?

Tom Mumley response – The 2.5 ppb is a numeric target, not a water quality objective. A TMDL requires a numeric endpoint; in this case we need to translate that numeric water quality objective into a numeric endpoint. However, that numeric endpoint does not have to be a water quality standard, it can be part of the implementation plan. Therefore the numeric target would appear in the implementation chapter, not the water quality objective chapter. It has a different burden for us as we have to justify that number; we cannot create a number that is arbitrary and capricious. If there are concerns about the target or the justification for the number, we will entertain those comments to ensure that our rationale for 2.5 ppb is justified or that there is no preferred option.

The policy call is in terms of it being exercised as a numeric target within the implementation plan, which helps us identify whether implementation actions are sufficient to attain water quality standards. I may have confused you more with the jargon but we do have an obligation to express numeric targets deemed equal to attainment of water quality standards, and to ensure that other requirements are met to comply with CEQA, etc. We need to balance our legal challenges.

Paul Singarella response – What I am driving at is that I did not see anything in the Project Report that drove the narrative standard to produce a 2.5 ppb sediment target. If that is in the report, please tell me. I assume there is some range of discretion claimed by the agency in the selection of that number that is driven by policy.

Tom Mumley response – There is not a lot in the report to explain how we arrived at 2.5 ppb. We will have to look into that. We do have a food web model project underway, which is designed to provide that linkage. This number could be a placeholder until we get those results.

Diane Mims, (Blasland, Bouck & Lee) - We will get a chance to review the results of the food web model project?

Tom Mumley response – Yes, the Clean Estuary Partnership (CEP) is preparing the model. I do not know if everyone is familiar with the CEP. It is a partnership between the Water Board, BACWA, BASMAA and others to pool resources and conduct joint fact finding for TMDL development. Even the scope for developing this food web model project did undergo a peer review exercise. If the findings are found to be in doubt, we have funding for additional peer review to ensure it was an unbiased approach. The draft report is expected for the end of April (academic work) we are waiting for it to happen in order to improve the answer to the question.

Shana Lazerow (San Francisco Baykeeper)

I wanted to acknowledge the quality of the Project Report. I was able to learn a lot about the issue in a not too painful way. I have a couple of policy points as well.

This Water Board has the power to regulate all sources of PCBs coming into the Bay. The Central Valley is not a source; it is a geographic place. To have a complete TMDL, the Water Board needs to use its the power to regulate specific entities in the Central Valley, for example, the City of Sacramento sewage treatment plant.

We are concerned about 100-year recovery estimate. If all external loads were reduced to zero then we could reduce the amount of PCBs in the Bay by 25% in the next 40 years. This is a much better timeline. We agree with the dredging community that it is time to close the taps.

There seem to be some missed opportunities in the implementation plan. For example, there is a difference in treatment levels among the different wastewater agencies. This is an opportunity to bring up those levels of treatment and bring the contributions down.

Finally, during the CEQA process, we advocate the use of a precautionary approach. When you do the cost analysis, you must also include the cost to the environment and the public of not taking action. If you decide not to take some action because of the economic consequences, you must be explicit about the environmental costs.

Tom Mumley response – We recognize that many of these issues mirror those we are trying to address with the mercury TMDL.

Paul Singarella (Latham and Watkins): I have a technical question. I find it difficult to get a sense of how many kilograms of PCBs are currently in Bay fish. Does the agency have a sense of how many kilograms of PCBs are in the fish now and how that number would change if the concentrations go down? Not individual fish – but collectively in the whole Bay. If you have that calculation, I would appreciate if you could share it with us.

Tom Mumley response – You ask whether we can we do a calculation as to the mass of PCBs in the biota that are the cause of our concern? It is not an easy question to answer. We will need to consider that question and get back to you on that.

Dan Russell (US Fish and Wildlife Service): I have two questions. The first is regarding the fish tissue target. To which fish is it applied (which trophic level and which species)? Secondly, regarding the proposed reduction of loads from Central Valley, how will they be achieving those reductions?

Tom Mumley response – We have not proposed any reductions – except natural attenuation.

Dyan Whyte response - As for the fish tissue target, the fish are chosen based on those most often consumed by humans. We are working with the RMP (Regional Monitoring

Plan). There was a consumption study that looked at the fish and we used their classification in terms of size and class. The intent was to bring down the PCB levels in fish that are being consumed by humans, such as swordfish. There are other prey fish that may have higher accumulations that affect wildlife but not humans. We want to fold that consideration into our monitoring and assessment work.

Richard Looker response – This approach is the same as for mercury. We know that the species of fish humans consume are bigger than those consumed by other wildlife. We are encouraging this issue to be studied by the RMP. Rather than trying to compute something for trophic models only, we also want to do surveillance on other prey species directly.

David Dwinell (US Army Corps of Engineers): You indicate that the model did not take into account mass loading from the sink in the inactive layer and that the load numbers were not set to specific sources. We were assuming the model would take that into account.

Fred Hetzel response – My understanding of the model is that there were some load and sink numbers, but that the loading was not set to specific sources. That would be in the new model.

Response– I assume the model takes into account inputs?

Tom Mumley response – The load curve can come from any source – including erosion.

SFEI response: The loading curve can come from any sources: erosion, buried sediment, etc. In that graphic with the recovery curve, all sources are included.

IV. Conclusion

Tom Mumley ended the meeting by thanking participants for their comments. He noted that Board staff would be reviewing and considering the comments and would likely be contacting various organizations to discuss them further. As appropriate, revisions would be incorporated into the Staff Report and draft Basin Plan Amendment. He also announced that a meeting summary of the meeting would be developed and distributed in the following weeks. He confirmed that there would be an opportunity for the people who commented to review their comments prior to its distribution.